

DESCRIPTION

The 8902 simulation panel may be used for demonstration and testing of GEM 80 controllers. It connects to the basic I/O highway ribbon cable and provides switches and displays for both on/off states and numeric values. In addition it has a potentiometer and meter which may be connected to analogue I/O.

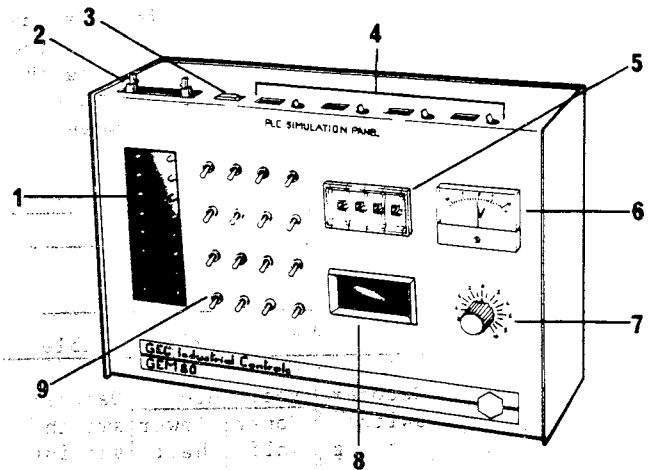
FEATURES

- Useful for testing programmes in Control Language.
- Commissioning and fault finding aid.
- Addresses user selectable to match any configuration.
- Several units may be used to simulate larger systems.
- Aid for training of personnel.

SPECIFICATION

On/Off Inputs	: 16 toggle switches
On/Off Outputs	: 16 individual lamps (red LEDs)
Numeric Input	: 4 decade thumbwheel 8,4,2,1 weighted binary coded decimal (BCD)
Numeric Output	: 4 decade LCD display 8,4,2,1 weighted BCD.
Addressing	: Individual address setting for each I/O group of 16 on/off states or 4 decade number.
Analogue Input	: one potentiometer + 10V nominal
Analogue Output	: one meter +50 μ A full scale +10V nominal accuracy $\pm 3.5\%$
Connections	: plug/socket to basic I/O highway ribbon
Power Consumption	: 260mA max (all lamps on) @ +15V from basic I/O highway ribbon. 2mA @ +15V and -15V for analogue input (via analogue cable)

8902 Basic I/O Simulation Panel



1. 16 Lamp outputs
2. Connector for basic I/O highway ribbon
3. Connector for analogue I/O
4. Address setting switches for each I/O group
5. 4 Decade thumbwheel
6. Analogue output meter
7. Analogue input
8. 4 Decade display
9. 16 Switch inputs

Cable supplied : 2m long cable for analogue I/O including connector for plugging into simulation panel and individual plugs for monitor sockets on GEM 80 modules.

Dimensions : 86 x 353 x 248mm (high x wide x deep)

Weight : 2.1 Kg including cable

Temperature : 0 to 55°C operating
-20 to 60°C storage

Humidity : 10 to 90% non-condensing

APPLICATION NOTES

1. BASIC I/O ADDRESS SETTING

Each I/O group address can be independently set using a rotary decoder switch and an odd/even address toggle switch.

The reference numbers in table 1 are prefixed A or B according to whether the group is input or output.

TABLE 1 ADDRESS SWITCH SETTINGS					
First Ribbon Cable			Second Ribbon Cable		
Data table location		Switch Setting	Data table location		Switch Setting
EVEN	ODD		EVEN	ODD	
0	1	0	16	17	0
2	3	1	18	19	1
4	5	2	20	21	2
6	7	3	22	23	3
8	9	4	24	25	4
10	11	5	26	27	5
12	13	6	28	29	6
14	15	7	30	31	7

Any group not required should have its decoder switch set to position 8 or 9.

The data table locations marked on the unit correspond to the demonstration mode for which the switch settings are shown in table 2.

I/O	DATA TABLE LOCATION	DECODER SETTING	TOGGLE SWITCH SETTING
LAMPS	B0	0	EVEN
TOGGLE SWITCHES	A1	0	ODD
DECADE DISPLAY	B2	1	EVEN
THUMBWHEELS	A3	1	ODD

It is recommended that the user should adopt these settings whenever possible. If other settings are required the user is advised to make simple labels to identify his chosen data table locations.

2. CONNECTIONS FOR ANALOGUE I/O

To make use of the potentiometer and meter on the panel it is necessary for the user to connect the analogue cable to a +15V supply, and the analogue I/O points of the GEM 80 Controller. The cable is supplied with probes suitable for the analogue monitor sockets on the front panel of GEM 80 modules, as shown in Table 3. The earth wire carries a crocodile clip which must be connected to safety earth. The power supply leads may be stripped and connected to a suitable source.

If the simulation panel is always to be used with the same GEM 80 Controller it is recommended that the probes should be removed and the cable terminated at the rear of the subrack.

TABLE 3 ANALOGUE CONNECTIONS			
Connector Pin No.	Wire Colour	Function	Recommended Signal Source
4	Orange	+15V	Regulated +15V DC power source
6	Pink	0V	
8	Blue	-15V	
3	Red	Input sig) Input com)	Pair of monitor sockets on analogue input module
7	Black		
5	Red	Output sig) Output com)	Signal output and 0V sockets on analogue output module
9	Black with white stripe		
1	Black with green sleeve	case earth	Safety earth

* Signal and common are twisted pair.
The connector is 9 pin D type, male on cable.

The data table locations marked on the unit (CO and D32) assume that the first two positions on the fast I/O highway are for analogue input and output respectively, with the first channel in each case connected to the simulation panel. If other locations are required, the user is advised to make simple labels to identify his chosen data table locations.

3. NON BCD DIGITS ON DECADE DISPLAY

Decade displays are normally used in conjunction with BCD output special function BCDOUT, which restricts the range of each digit to @0 to @9. If non-BCD digits are output the characters displayed are the same as for decade display units 8932/3 i.e.

@A = L @C = P @E = minus sign
@B = H @D = A @F = blank

The simulation panel responds to block presence sensing as if each I/O group was a panel full of logic I/O blocks. If the user program uses rungs to detect missing I/O blocks, then the substitution of a simulation panel in place of a panel of blocks does not require alteration to the program.

5. SETTING OF GROUPS TO THE SAME ADDRESS

Although this is not normally intended, no damage is caused if two or more groups are accidentally set to the same address. For outputs this feature could be used to give both binary and decimal indication of the output data.

ORDERING CODES

Simulation panel including 2m cable
type 8890 4030 for analogue connection

8902

CEGELEC

INDUSTRIAL CONTROLS

Kidsgrove, Stoke-on-Trent, ST7 1TW, England

Tel: (0782) 783511 Fax: (0782) 776329 Telex: 36293/4 CICKID G

Registered in England No. 2259095

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Note: The Company's policy is one of continuous development. Products supplied may differ from those described herein.